

BE 746,615

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KINGDOM OF BELGIUM  
MINISTRY OF ECONOMIC AFFAIRS  
PATENT NO. 746, 615

International classification: A 61 k

Issued: July 31, 1970

The Minister of Economic Affairs,  
Considering the law of May 24, 1854 on patents;  
Considering the Union Convention for Protection of Patent Rights;  
Considering the record drawn up on February 27, 1970 at 2:45 p.m with the clerk's office  
of the Provincial Government of Anvers;

DECREES:

Article 1. - Granted to Mr. Kurt Herten, Jentgessallee 1, 415 Krefeld (Germany),  
represented by Mr. J.R. Ottelohe in Anvers,  
is a patent for: Means of preventing hair loss, which he declares to have been the object of a  
patent application filed in Germany (Federal Republic), March 1, 1969, No. P 19 10 561.4 (for  
Claims 1 to 10).

Article 2. - This patent is granted to him without examination beforehand, at his own risk,  
without guarantee of the reality, of the novelty or of the merit of the invention or of the  
exactitude of the description, and without prejudice to the right of third parties.

Accompanying the present decree is one of the duplicates of the specification of the  
invention (specification of patent and possibly drawings) signed by the concerned party and filed  
in support of his patent application.

Brussels, April 30, 1970

By special delegation:

[illegible]

J. Hamels

Description of a patent application in the name of Kurt Herten for:

Means of preventing hair loss

Priority for Claims 1 to 10 of the patent application filed in Federal Republic of Germany, March  
1, 1969 under the No. P 19 10 561.4

The invention relates to a means of preventing hair loss.

It has not been possible up to now to explain satisfactorily the cause of hair loss and the appearance of generalized baldness in men and women. The current state of the art, applied to the prevention of hair loss, is based on facts of experience observed on the occasion of the appearance of aging phenomena in human beings, the most often local limiting of baldness to the region of the top of the brain case, and accidental sequelae occurring subsequent to problems in metabolism, for example, with pregnancy, fevers, poisonings or treatment using drugs.

Starting from these facts of experience, attempts have been made to prevent hair loss by improving metabolism in the region where the hair grows, and for this purpose, sexual hormones, glandular hormones, vitamins and plant extracts have been used. Likewise, attempts have been made in the past to prevent hair loss by local intake of tissue reconstitution substances, in particular amino acids and their derivatives. Finally, means have also been used making it possible to widen the capillary blood vessels. But up to now, generally satisfactory and certain results have not yet been obtained.

These considerations, which led to proposing the present invention, start from the principle that the possible factors of problems in nutrition of the hair only produce their effects in the scalp, because of the unfavorable anatomical position of it with regard to blood circulation. It results therefore that the irrigation of the tissues by means of the serum is slowed down and that the permeability of the cell walls of the scalp decreases. Another consideration starts from the fact that another disposition of the capillaries (hyperemia) causes a lowering of the internal pressure on the walls in the arterial capillary zone and an increase of this pressure in the venous capillary zone. This results in a decrease of pressure of the serum of the tissues in the arterial capillary zone and a reduced back flow in the venous capillary zone.

For these reasons, the steps taken up to now for preventing hair loss by widening the vessels have not encountered any success. The hair can be suitably nourished only if the serum which effectively contains all the necessary substances irrigates the tissue more and if the cell wall becomes completely permeable.

These facts led the inventor to recognize that it is necessary to use some means capable of increasing the strength of the capillaries or to make these capillaries impervious while making the blood circulate normally in the capillaries. They see to it that the test arterial pressure is maintained by decreasing the permeability with regard to albumins and substances with a higher molecular weight.

The inventor proposes therefore, as means of preventing hair loss, a substance which, in direct contrast with the state of the art, does not contain any means of widening the capillaries but rather some means of making them impervious. Furthermore, the means according to the

invention must contain mineral salts, as well as substances which mobilize calcium, such as parathyroid glandular hormone or dihydrotachysterol.

The mineral salts, added to the substance along with the means of making the capillaries impervious, and the substances which mobilize calcium are used to increase the permeability of the cell walls of the scalp with regard to the nutritive substances.

According to another characteristic of the invention, it is provided that the mineral salts are composed of calcium and/or potassium salts. If applicable, it is also possible to use magnesium salts.

The inventor finally provided that the residual ions of acid of the salts are composed of halogen-containing ions and/or  $\text{PO}_4$  ions and/or  $\text{SO}_4$  ions.

The effectiveness of the means according to the invention can also be enhanced by the fact that metabolism detoxication agents, composed of methionine derivatives, in particular acetylmethionine, are added to this means.

According to another characteristic of the invention, the means of making the capillaries impervious must be composed preferably of rutin derivatives, in particular trihydroxyethylrutosidum, or hesperidin derivatives, such as hesperidin-methylchalcone.

The inventor also provides that the means in question will be manufactured in liquid form.

Finally, substances with an affinity for the skin will be added to this means, in particular glycerin which will be used for transport of said means in the deepest skin layers.

Example: in order to prevent continuation of hair loss, several patients were treated using the following composition:

Parathyroid glandular hormone	20 Collip units
Potassium chloride	30.0 mg
Magnesium chloride	38.1 mg
Calcium chloride	44.4 mg
d,l-acetylmethionine	500.0 mg
Trihydroxyethylrutosidum	500.0 mg
Distilled water	15.0 g
Glycerin	to 50 g

The treatment is performed by applying the means to the brain case. It was thus possible to observe that the hair loss in general stopped immediately. Occasionally, other treatments were necessary, which were done at intervals of approximately 14 days.

Furthermore, the inventor provides that the metabolism detoxication agent is composed of a substance based on epsilon-aminocaproic acid.

According to the invention, it can however be provided that the metabolism detoxication agent is an antifibrinolytic product.

According to another characteristic of the invention, the metabolism detoxication agent can also be composed of methionine derivatives, as well as other amino acids, such as those coming from the hydrolysis of tissues, in particular liver hydrolysates.

The substances with an affinity for the skin and used for this reason for the transport of the means in question in the deepest layers of the skin, according to another characteristic of the invention, can be composed also of an antifibrinolytic product.

In an appropriate version of this idea of the invention, it is moreover provided that the antifibrinolytic product will be based on epsilon-aminocaproic acid.

The antifibrinolytic product, used for detoxication of the metabolism, in an appropriate version of the invention, is based on trans-4 (aminomethyl)cyclohexanecarboxylic acid.

### Claims

1. A means of preventing hair loss, characterized by the fact that the means used for this purpose contains mineral salts in connection with other means which mobilize calcium, such as, for example, parathyroid glandular hormone or dihydrotachysterol, and a means of making the capillaries impervious.
2. A means of preventing hair loss according to Claim 1, characterized by the fact that the mineral salts are composed of calcium and/or potassium salts.
3. A means of preventing hair loss according to Claim 2, characterized by the presence of magnesium salts along with the calcium and/or potassium salts.
4. A means of preventing hair loss according to one of Claims 1 to 3, characterized by the fact that the residual ions of acids of salts are composed of halogen-containing ions and/or  $\text{PO}_4$  ions and/or  $\text{SO}_4$  ions.
5. A means of preventing hair loss according to one of Claims 1 to 4, characterized by the fact that metabolism detoxication agents are added to said means.
6. A means of preventing hair loss according to Claim 5, characterized by the fact that the metabolism detoxication agent is composed of methionine derivatives, in particular acetylmethionine.
7. A means of preventing hair loss according to one of Claims 1 to 6, characterized by the fact that the means of making the capillaries impervious is composed of rutin derivatives, preferably trihydroxyethyl-rutosidum.
8. A means of preventing hair loss according to one of Claims 1 to 6, characterized by the fact that the means of making the capillaries impervious is composed of hesperidin derivatives, in particular hesperidin-methylchalcone.

9. A means of preventing hair loss according to one of Claims 1 to 8, characterized by the fact that this means is manufactured in liquid form.

10. A means of preventing hair loss according to one of Claims 1 to 9, characterized by the fact that substances with an affinity for the skin are added to this means, in particular glycerin which is used for transporting said means in the deepest layers of the skin.

11. A means of preventing hair loss according to Claim 4, characterized by the fact that the metabolism detoxication agent is composed of a substance based on epsilon-aminocaproic acid.

12. A means of preventing hair loss according to Claim 4, characterized by the fact that the metabolism detoxication agent is an antifibrinolytic product.

13. A means of preventing hair loss according to Claim 6, characterized by the fact that the metabolism detoxication agent is composed of methionine derivatives as well as other amino acids such as those coming from the hydrolysis of tissues and in particular liver hydrolysates.

14. A means of preventing hair loss according to Claim 12, characterized by the fact that the antifibrinolytic product is based on trans-4 (aminomethyl)cyclohexanecarboxylic acid.

15. A means of preventing hair loss according to Claim 10, characterized by the fact that the substances with an affinity for the skin are composed of an antifibrinolytic product.

16. A means of preventing hair loss according to Claim 15, characterized by the fact that the antifibrinolytic product is based on epsilon-aminocaproic acid.

Antwerp, February 27, 1970

Per pro Kurt Herten

Per pro J.R. Ottelohe